Remarks

Claims 1-20 were pending in the application. Claims 1-20 were rejected. No claims were merely objected to and no claims were allowed. By the foregoing amendment, no claims are canceled, claims 9, 10, and 15 are amended, and no claims are added. No new matter is presented.

The Drawings

The drawings were objected to for failing to show the machine tool. By the foregoing amendment, the tool (which may be of a known, prior art, configuration) is schematically identified in FIG. 2 by reference numeral 25. The specification is correspondingly amended.

Claim Objections

Claim 9 was objected to under 37 C.F.R. 1.75(c). It was asserted: "The language is narrative and describes what may be possible as to how a stream may behave in the nozzle; it does not limit the parent claim with any additional structures and/or element." Office action, page 2. Applicants respectfully traverse the rejection as to the claim as amended. The amended claim identifies the fluid streams as an element of the combination.

Claim Rejections-35 U.S.C. 112

Claim 15 was rejected under 35 U.S.C. 112(2) for a lack of antecedent basis for "quill". This has been corrected to "bit" to address the rejection.

Claim Rejections-35 U.S.C. 102

Claims 10-12 and 20 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,471,573 of Reitmeyer. Applicants respectfully traverse the rejection.

Independent claim 10 identified a "circumferential spacing between adjacent ones of the outlets [as] being no more than 72°..." Independent claim 20 identified a "circumferential spacing between each of the outlets and an associated two adjacent ones of the outlets of no more than 72°..." The Office action identified Reitmeyer elements 27, 29a, and 29b as the outlets. Clearly, the circumferential spacing between the single central outlet 27 and each of its two adjacent

outlets 29a and 29b is within the claimed 72°. However, this is not the case for the outlets 29a and 29b. Although each is within 72° of one of its adjacent outlets, there is a gap in excess of 270° between it and the other outlet. Even with a very broad claim interpretation, claim 20 specifically identifies the plural "each of the outlets" as having the claimed relationship to "an associated two adjacent ones..." The plural is not anticipated by the singular. Claim 10 has been amended to further clarify this. Such amendment does not raise a new issue as the issue has already been present in claim 20.

Claims Rejections-35 U.S.C. 103

Claims 1-9 and 15-19 were rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent 5,332,341 of Arai et al. in view of U.S. Patent 4,252,768 of Perkins et al. Applicants respectfully traverse the rejection.

Arai et al. discloses a pressure foot for a printed circuit board drilling apparatus discussed in the prior amendment. Perkins et al. discloses a very specific construction of a sandblasting nozzle. The Perkins et al. nozzle has a core and a separate casing. The core material is a ceramic composite having a composition selected for properties including high temperature oxidation resistance, high strength, high abrasion resistance, high resistance to thermal shock, and the like. Col. 3, lines 26-63. The Perkins et al. delivery of a high temperature sandblasting medium is substantially different from both the pressure foot of Arai et al. on the one hand and the present coolant nozzle on the other hand. There has been no properly cited motivation as to why one of ordinary skill in the art would so modify the Arai et al. pressure foot, let alone attempt its use as a coolant nozzle.

Claim 2 further identifies the body as being a single unitary piece. This, of course, does not preclude the presence of other components such as fittings, fasteners, and the like. Perkins et al. fails to disclose this, let alone suggest this as part of a combination with Arai et al. Perkins et al. clearly teaches away, using ceramic only as a core/insert within a case or body.

Claim 5 identifies the outlets as positioned to direct coolant streams toward an axis of the bit. Arai et al. clearly teaches away from this. The direction appears tangential (and away from rather than toward the tip).

Claim 15 identifies the cooling outlet as providing redundant coverage around the

circumference of the quill so that, during a machining operation, the effects of a workpiece blocking one or more sprays of the coolant are limited. The Arai et al. configuration does not provide for workpiece blockage because the outlets are positioned and oriented for a different purpose. The Office action stated that "changing shape, dependent on work-piece parameters, involves only routine skill in the art." Office action, page 5. However, there is no indication that Arai et al. is subject to any changes in work-piece parameters.

Claims 3, 16, 17, and 19 were rejected under 35 U.S.C. 103(a) as unpatentable over Reitmeyer. It was asserted that "Reitmeyer meets all of the limitations of above claims, except for the number of outlets, the size and the combination with a quill, all obvious modifications..." Office action, page 5. This is merely a hindsight reconstruction of the present invention. The attempted modification of Reitmeyer, if possible, would greatly increase Reitymeyer's already high complexity and manufacturing cost. This further confirms the non-obviousness of the present invention.

Claims 1-9, 14, 15, and 18 were rejected under 35 U.S.C. 103(a) as unpatentable over Reitmeyer in view of Perkins et al. Applicants respectfully traverse the rejection.

There is no suggestion for the proposed combination just as there is no suggestion for the Arai et al. and Perkins et al. combination.

Accordingly, Applicant submits that claims 1-20 are in condition for allowance. Please charge any fees or deficiency or credit any overpayment to our Deposit Account of record.

Respectfully submitted,

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